REMARKS

Applicant is in receipt of the Office Action mailed August 14, 2003. Claims 27-59 were pending in the application prior to the present amendment. Applicant has amended various of the claims.

Information Disclosure Statement

The Office Action noted a document titled "IMAQ Vision User Manual" which was referenced in the specification. Applicant includes this document in an IDS herewith.

Objection to the Drawings

The Office Action maintained the objection to Figures 1A, 1B and 2 as well as Figures 4 – 11 and 22, stating that these Figures should have a prior art label.

With respect to Figures 4 – 11 and 22, Applicant's position was that these Figures form part of the claimed combination. However, Applicant has carefully reviewed these Figures with respect to the IMAQ Vision Builder Tutorial prior art reference and agrees that the content of these particular figures was known in the prior art. Thus Applicant submits revised Figures 4 – 11 and 22 which include a prior art label.

With respect to Figures 1A, 1B and 2, Applicant respectfully maintains that a prior art label for these Figures would be improper. Figures 1A and 1B include Software element 104 which comprises at least a portion of the claimed invention. Applicant notes that the present specification clearly describes the computer system 102 of Figures 1A, 1B and 2 as including "computer programs or software components according to the present invention" (see page 12 lines 19-21) stored on a memory medium, e.g., floppy disks 104 (pg. 12, line 22) or main memory 166 (pg. 13, lines 21 – 22). Thus, the patent application specification clearly states that the computer system 102 and memory medium 104, 166 in each of Figures 1A, 1B and 2 contain software programs according to the invention. Therefore, Applicant submits that it would be incorrect and inconsistent with the patent application specification to label these figures as prior art, since these figures are described as containing the invention.

§ 112 Rejections

Claims 27-46 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as invention. The Office Action recites, "Claims 27 and 41 each recite the limitation 'said executing the image processing algorithm' in lines 7-8 and 8-9, respectively. There is insufficient antecedent basis for this limitation in the claim." Applicant has amended claims 27 and 41 and respectfully submits that claims 27 and 41 and their dependent claims are allowable under 35 U.S.C. 112.

The Office Action also recites, "Based on the presentation order of the claims, it is presumed that the Applicant intended the claims 39 and 40 to depend from claim 38 rather than presently indicated claim 37." In fact, upon review, claim 40 should have depended on claim 38, and claim 39 should have depended on claim 27. Applicant has accordingly amended claim 39 to depend on claim 27 and has amended claim 40 to depend on claim 38. Thus, Applicant submits that claims 39 and 40 are allowable under 35 U.S.C. 112.

§ 102 Rejections

Claims 47, 49-51, and 53-59 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,298,474 to Blowers et al.

The Office Action states that claims 47 and 51 are disclosed in Blowers et al. by ". . .and programmatically changing the image processing algorithm in order to reduce the execution time of the image processing algorithm (see, for example, the 'Stop Result By' and 'Stop Result Count' fields in the 'Blob Properties' dialog box of Fig. 7)" (*Emphasis Added*). In column 9, lines 1-6, Blowers et al. teaches "The task sequence generation window illustrated in FIGS. 7-9 allows the user to acquire an image from a camera; process image; find rotation; set origin, set X axis; find model; find edge; blob; caliper; interact with I/O; and decisional branch, as described hereinbelow with respect to the tools of the tool boxes of FIG. 5" (*Emphasis Added*). Blowers et al. further teaches, in column 9, lines 7-10, "Parameters are configurable on each of the tasks where the parameters control the way the function generates results, as illustrated in FIGS. 7 and 8

with respect to the blob and alignment vision tools, respectively" (*Emphasis Added*). Thus, the user configures the parameters that are configurable such as the blob parameters in Fig. 7 of Blowers et al.

Applicant's specification recites on page 16, lines 7-12:

> It is noted that in one embodiment the image prototyping environment may automatically or programmatically generate and display suggested changes in the algorithm, e.g., in response to user input specifying desired execution time criteria. For example, the prototyping environment may suggest changes to parameters in various image processing functions or may suggest an alternative sequence of steps to replace existing steps."

In conclusion, Blowers et al. nowhere suggests or teaches:

> A memory medium comprising program instructions for creating an image processing algorithm, wherein the program instructions are executable to implement:
>
> performing one or more image processing functions on an image in response to user input;
>
> recording the one or more image processing functions, wherein the one or more image processing functions define an image processing algorithm;
>
> executing the image processing algorithm in response to user input;
>
> measuring an execution time that elapses during said executing the image processing algorithm; and
>
> **programmatically changing the image processing algorithm** in order to reduce the execution time of the image processing algorithm.

as recited in claim 47. Thus, Applicant respectfully submits that claim 47 and those dependent thereon are allowable.

In a similar manner, Applicant submits that claim 51 and those dependent thereon are allowable. Claim 51, recites as follows:

> A computer-implemented method for creating an image processing algorithm, comprising:
>
> performing one or more image processing functions on an image in response to user input;
>
> recording the one or more image processing functions, wherein the one or more image processing functions define an image processing algorithm;
>
> executing the image processing algorithm in response to user input;

measuring an execution time that elapses during said executing the image processing algorithm; and

programmatically changing the image processing algorithm in order to reduce the execution time of the image processing algorithm.

Furthermore in a similar manner, Applicant submits that claim 55 and those dependent thereon are allowable. Claim 55, recites as follows:

A memory medium comprising program instructions for creating an image processing algorithm, wherein the program instructions are executable to implement:

performing one or more image processing functions on an image in response to user input;

recording the one or more image processing functions, wherein the one or more image processing functions define an image processing algorithm;

executing the image processing algorithm in response to user input;

measuring an execution time that elapses during said executing the image processing algorithm;

programmatically determining one or more suggested changes to the image processing algorithm in order to reduce the execution time of the image processing algorithm; and

displaying information indicating the one or more suggested changes.

In a similar manner, Applicant submits that claim 59 and those dependent thereon are allowable. Claim 59, recites as follows:

A computer-implemented method for creating an image processing algorithm, comprising:

performing one or more image processing functions on an image in response to user input;

recording the one or more image processing functions, wherein the one or more image processing functions define an image processing algorithm;

executing the image processing algorithm in response to user input;

measuring an execution time that elapses during said executing the image processing algorithm;

displaying information indicating suggested changes to the image processing algorithm in order to reduce the execution time of the image processing algorithm;

receiving user input accepting one or more of the suggested changes; and

programmatically making the accepted changes to the image processing algorithm.

§ 103 Rejections

Claims 48 and 52 were rejected under 35 U.S.C 103(a) as being unpatentable over Blowers et al. As stated above, Applicant submits that claims 47 and its dependent claims and 51 and its dependent claims are patentable over Blower et al.; thus, Applicant submits that claims 48 and 52 are patentable over Blowers et al. under 35 U.S.C. 103(a).

The Office Action states, "However, Official Notice is taken that it has been well known and practiced to incorporate 'undo' commands into user interfaces of programs that involve user-editable features. **One example of this** practice can be found within **the MICROSOFT WORD software for word processing,** in which the 'Edit' menu provides an 'Undo' command **for undoing user-initiated** actions (as well as some automatic actions such as automatic formatting)" (*Emphasis Added*). Applicant respectfully submits that the MICROSOFT WORD software for word processing is not for creating an image processing algorithm. Further, claims 48 and 52 recite that user input is received to undo changes to an image processing algorithm that have been programmatically made, i.e., changes that have been made by a software program, as opposed to changes made by direct user input making the change. To Applicant's knowledge, this is not taught or suggested in prior art.

Claims 27-30, 33-44, and 46 were rejected under 35 U.S.C. 103(a) as being unpatenable over U.S. Patent No. 6,298,474 to Blowers et al. in view of U.S. Patent No. 5,293,429 to Pizano et al.

The Office Action states, "Blowers et al. fail to expressly disclose determining an average amount of time required to execute the image processing algorithm. However, Pizano et al. teach determining an average amount of time required to execute an image processing algorithm by using a plurality of input images (see column 11, lines 34-42)."

Pizano et al. teaches a ". . .methodology chosen for the development of the form recognition system. This methodology follows the classical pattern recognition approach in which features are extracted from the objects of interest, then matched against those of a group of templates that characterize the pattern classes" (*Emphasis Added*) (column 2, lines 39-44). Furthermore, Pizano et al. nowhere teaches or suggests:

> A computer-implemented method for evaluating the performance of an image processing algorithm, the method comprising:
>
> performing a plurality of image processing functions on an image in response to user input;
>
> recording the plurality of image processing functions, wherein the plurality of image processing functions define an image processing algorithm;
>
> receiving user input specifying a plurality of images on which to execute ~~perform said executing~~ the image processing algorithm;
>
> executing the image processing algorithm on each of the plurality of images;
>
> measuring amounts of time that elapse while executing the image processing algorithm on each of the plurality of images;
>
> determining an average amount of time required to execute the image processing algorithm, based on said measuring the amounts of time that elapse while executing the image processing algorithm on each of the plurality of images; and
>
> displaying information indicating the average amount of time required to execute the image processing algorithm for the plurality of images.

as claim 27 currently recites.

Pizano et al. additionally recites "FIG. 11 depicts recognition time" (*Emphasis Added*) (column 2, line 7). Moreover, Pizano et al. recites, "This section presents the results of tests performed with the form recognition system. . ." (*Emphasis Added*) (column 10, lines 26-27). Additionally, Pizano et al. recites, "The speed of the [form recognition] system was determined through a separate group of tests in which 100 forms were run against dictionaries of different sizes. The results are illustrated in FIG. 11 [depicting recognition time]. In this figure [depicting recognition time] the average time spend [sic] in each form is divided into two parts: one corresponding to line recognition [which involves the use of horizontal and vertical lines as features for identifying a form] and the other to matching [which systematically traverses a form dictionary to determine

the class to which an actual production form belongs]." (*Emphasis Added*) (column 11, lines 26-27).

Applicant, also, submits Pizano et al. does not teach a computer-implemented method used to obtain the average time as a computer implementation. Pizano et al. at most may teach that a human uses a pen and paper for the results in FIG. 11 depicting form recognition time. Furthermore, since Blowers et al. fail to expressly disclose determining an average amount of time required to execute the image processing algorithm and Pizano et al. teaches an image recognition system, Applicant respectfully submits that claim 27 and its dependents and, similarly, claim 41 and its dependents are patenable over Blowers et al. in view of Pizano et al.

As per claims 33-35 and 46, the Office Action recites, "Blowers et al. fail to expressly disclose determining average amounts of time. However, as described above, it would have been obvious to one having ordinary skill in the computer art at the time the invention was to modify the method of Blowers et al. to include determining an average amount of time required to execute an image processing algorithm by using a plurality of input images as per the teachings of Pizano et al."

In a similar manner as described above, Applicant respectfully submits that claims 33-35 and 46 are patentable over Blowers et al. in view of Pizano et al., since Blowers et al. fail to expressly disclose determining an average amount of time required to execute the image processing algorithm and Pizano et al. teaches an image recognition system.

The Office Action states, "As per claims 28 and 42, Blowers et al. further disclose displaying information indicating a rate at which the image processing algorithm is capable of processing images, based on the amount of time that elapses during said executing the image processing algorithm (see, for example, Fig. 9, along with the description of 'GetMinimumTime' in the table of column 13)." Blowers et al. generally refers to optional interfaces used with the COM (common object model) environment in the table of column 13 which refers to each function of an algorithm of functions. Blowers et al. nowhere teaches or suggests, "displaying information indicating a rate at which **the image processing algorithm** is capable of processing images, based on the average amount of time" as recited in claim 28. Thus, claim 28 is patentable over

Blowers et al. Furthermore, in a similar manner, claim 42 is patentable over Blowers et al.

As stated above, Blowers et al. generally refers to optional interfaces used with the COM (common object model) environment in the table of column 13 which refers to each function of an algorithm of functions; thus, the field "GetMinimumTime" of the table of column 13 would not be one or more of the minimum time required time required for executing **the image processing algorithm**. Blowers et al. nowhere teaches or suggests, "displaying one or more of the minimum time required and the maximum time required for executing **the image processing algorithm**" as recited in claim 29. Thus, claim 29 is patenable over Blowers et al. Furthermore, in a similar manner, claim 43 is patentable over Blowers et al.

The Office Action recites, "As per claim 36, Blowers et al. further disclose determining memory requirements for the image processing functions (see, for example, the description of 'GetMemorySize' in the table of column 13. Therefore, for reasons stated above, such a claim also would have been obvious."

As noted above, Blowers et al. generally refers to optional interfaces used with the COM (common object model) environment in the table of column 13 which refers to each function of an algorithm of functions; thus, the field "GetMemorySize"' of the table of column 13 would not be one or more of the minimum time required memory size required for executing **the image processing algorithm**. Blowers et al. nowhere teaches or suggests, "displaying one or more of the minimum time required and the maximum time required for executing **the image processing algorithm**" as recited in claim 29. Thus, claim 29 is patenable over Blowers et al. Furthermore, in a similar manner, claim 43 is patentable over Blowers et al.

The Office Action states that claims 38-40 are disclosed in Blowers et al. by ". . .and programmatically making the indicated changes to the image processing algorithm by changing parameter values associated with image processing functions (see, for example, the 'Stop Result By' and 'Stop Result Count' fields in the 'Blob Properties' dialog box of Fig. 7))" (*Emphasis Added*). In column 9, lines 1-6, Blowers et al. teaches "The task sequence generation window illustrated in FIGS. 7-9 allows the user to acquire an image from a camera; process image; find rotation; set origin, set X axis; find model;

find edge; blob; caliper; interact with I/O; and decisional branch, as described hereinbelow with respect to the tools of the tool boxes of FIG. 5" (*Emphasis Added*). Blowers et al. further teaches, in column 9 lines 7-10, "Parameters are configurable on each of the tasks where the parameters control the way the function generates results, as illustrated in FIGS. 7 and 8 with respect to the blob and alignment vision tools, respectively" (*Emphasis Added*). Thus, the user configures the parameters that are configurable such as the blob parameters in Fig. 7 of Blowers et al.

Applicant's specification recites on page 16, lines 7-12:

> It is noted that in one embodiment the image prototyping environment may automatically or programmatically generate and display suggested changes in the algorithm, e.g., in response to user input specifying desired execution time criteria. For example, the prototyping environment may suggest changes to parameters in various image processing functions or may suggest an alternative sequence of steps to replace existing steps.

In conclusion, Blowers et al. nowhere suggests or teaches, "The method of claim 27, further comprising: programmatically changing the image processing algorithm in order to reduce the execution time of the image processing algorithm" as recited in claim 38. Thus, Applicant submits that claim 38 and its dependent claims are patentable over Blower et al.

The Office Action states that "claims 32 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blowers et al. in view of Pizano et al. as applied to claim 27 above, and further in view of 'Solaris User's Guide,' 1995, Sun Microsystems, Inc. (herein after SUG)."

Applicant respectfully submits that claims 32 and 45 are patentable over Blowers et al. in view of Pizano et al. as applied to claim 27 in a similar manor regarding claim 27 being patentable over Blowers et al. in view of Pizano et al. described above.

The Office Action recites, "As per claims 32 and 45 Blowers et al. in combination with Pizano et al. suggest a method (see disclosure and teachings applied above to claim 27 and 41) but fail to expressly disclose displaying a clock icon, which visually indicates the time data. However, SUG teaches a Performance Meter window with a dial display for monitoring aspects of system performance (see pages 323-330). Therefore, it would

have been obvious to one having ordinary skill in the computer art at the time of the invention was made to further modify the method of Blowers et al. to include such a display for visually indicating the time data" (Emphasis Added).

The SUG recites, "The needles move as system conditions change. The short needle, or hour hand, track average performance over a 20-second interval, and the long hand, or minute hand, tracks current performance over a 2-second interval. The display is updated every two seconds" (*Emphasis Added*) (page 324). Thus, the SUG nowhere teaches that the display represents time data. Furthermore, the SUG recites on pages 325-326:

> Here are the performance values you can display:
>
> - Show cpu monitors the percent of the CPU being used.
> - Show packets monitors the number of Ethernet packets per second.
> - Show page monitors the paging activity in pages per second.
> - Show swap monitors the number of jobs swapped per second.
> - Show interrupts monitors the number of device interrupts per second.
> - Show disk monitors disk traffic in transfers per second.
> - Show context monitors the number of context switches per second.
> - Show load monitors the average number of runnable processes over the last minute.
> - Show collisions monitors the number of collisions per second detected on the Ethernet.
> - Show errors monitors the number of errors per second receiving packets.

It is illustrated above that the SUG nowhere teaches or suggests monitoring a program or algorithm singly. With Blowers et al. failing to disclose displaying a clock

icon and the SUG not disclosing a display representing time data or performance of a single algorithm, Applicant respectfully submits that claims 32 and 45 are patentable over Blowers et al.

CONCLUSION

In light of the foregoing amendments and remarks, Applicant submits the application is now in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 50-1505/5150-45000/JCH.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☒ Request for Continued Examination

☒ Fee Authorization

☒ Replacement Figures 4-11 and 22

☒ Information Disclosure Statement with reference

Respectfully submitted,

Jeffrey C. Hood
Reg. No. 35,198
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert & Goetzel PC
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8800

Date: 11/4/2003